Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
FFFR O & 2005 B	Applicant: Yi Lu	
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			U.S. P/	ATENT DOCUMENTS			
Examiner Initials*		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
TU	Z1	5,459,040	10/1995	Hammock, et al.			
1	Z2	5,472,881	12/1995	Beebe, et al.			
	Z3	5,580,967	12/1996	Joyce			
	Z4	5,807,718	9/1998	Joyce, et al.			
	Z5	5,989,813	11/1999	Gerdes			
	Z6	6,706,474	03/2004	Lu, et al.			
	Z 7	6,361,944	03/2002	Mirkin, et al.			
	Z8	6,451,535	9/2002	Jenne, et al.			
	Z9	6,040,138	03/2000	Lockhart, et al.			
	Z10	5,593,835	01/1997	Rando, et al.			

FOREIGN PATENT DOCUMENTS

Examiner							Trans	lation
Initials*		Document Number	Date	Country	Class	Subclass	Yes	No
עד	Y1 •	WO 96/17086	6/1996	wo				
1	Y2 、	WO 98/27104	6/1998	wo				
	Y3 •	WO 98/49346	11/1998	wo				
	Y4 ~	WO 99/47704 Hostract only	9/1999	wo				
	Y5 .	WO 00/26226	5/2000	wo				
	Y6 •	WO 02/000006	1/2002	WO				
	Y7 ,	WO 03/094838	11/2003	wo				
	Y8 .	WO 00/58505 Abstract only	10/2000	wo				X
	Y9 •	GB 2,339,280	1/2000	GB				

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TV	Y10	EP 1,219,708	7/2002	EP		
	Y11 .	EP 121970	10/1984	EP	·	
	Y12	WO 99/13338	03/1999	wo		
	Y13 .	WO 98/39484	09/1998	wo		
	Y14 ·	WO 97/09342	03/1997	wo		

Examiner		OTHER ITEMS - NON PATENT LITERATURE DOCUMENTS
Initials*		Include, as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
TV	X1 、	Abstract of Joyce, G., "Design and catalytic activity of enzyumic DNA molecules"., (1998).
	X4	Allara, D. et al., "Spontaneously organized molecular assemblies. 1.Formation, dynamics and physical properties of n-alkanoic acids adsorbed from solution on an oxidized aluminum surface"., Langmuir, vol. 1, no. 1, pp. 45-52, (1985).
	X5 、	Andreola, M-L., et al., "DNA aptamers selected against the HIV-1 RNase H display in vitro antiviral activity"., Biochemistry, vol. 40, no. 34, pp. 10087-10094, (2001).
	Х6	Bain, C. D., et al., "Modeling organic surfaces with self-assembled monolayers"., Angew. Chem. Int. Ed. Engl., vol. 28, no. 4, pp. 506-512, (1989).
	X8 、	Been, M.D., et al., "Self-cleaving ribozymes of hepatitis delta virus RNA"., Eur. J. Biochem., vol. 247, pp. 741-753, (1997).
	X10 ,	Biroccio, A., et al., "Selection of RNA aptamers that are specific and high-affinity ligands of the hepatitis C virus RNA-dependent RNA polymerase"., Journal of Virology, vol. 76, no. 8, pp. 3688-3696, (2002).
	X11 _	Blake, D.A., et al., "Antibody-based sensors for heavy metal ions"., Biosensors & Bioelectronics, vol. 16, pp. 799-809, (2001).
	X12	Blank, M., et al., "Systematic evolution of a DNA aptamer binding to rat brain tumor microvessels. Selective targeting of endothelial regulatory protein pigpen"., Journal of Biological Chemistry, vol. 276, no. 19, pp. 16464-16468, (2001).
	X13	Bock, L.C., et al., "Selection of single-stranded DNA molecules that bind and inhibit human thrombin"., Nature, vol. 355, pp. 564-566, (1992).
	X14 、	Bogden, J.D., et al., "Soil contamination from lead in paint chips"., Bulletin of Environmental Contamination & Toxicology, vol. 14, no. 3, pp. 289-294, (1975).
	X15	Boiziau, C., et al., "DNA aptamers selected against the HIV-1 trans-activation-responsive RNA element form RNA-DNA kissing complexes"., Journal of Biological Chemistry, vol. 274, no. 18, pp. 12730-12737, (1999).
	X17	Breaker, R.R., "Catalytic DNA: in training and seeking employment"., Nature Biotechnology, vol. 17, pp. 422-423, (1999).
	X19 、	Breaker, R.R., "DNA enzymes"., Nature Biotechnology, vol. 15, pp. 427-431, (1997).
	X20 、	Breaker, R.R., "MOLECULAR BIOLOGY: Making Catalytic DNAs"., Science, vol. 290, issue 5499, pp. 2095-2096, (2000).
	X21 、	Breaker, R.R., et al., *A DNA enzyme that cleaves RNA"., Chemistry & Biology, vol. 1, no. 4, pp. 223-229, (1994).
	X22 、	Breaker, R.R., et al., "A DNA enzyme with Mg ^{2*} -dependent RNA phosphoesterase activity"., Chemistry & Biology, vol. 2, no. 10, pp. 655-660, (1995).
	X23 🔪	Breaker, R.R., et al., "Engineered allosteric ribozymes as biosensor components"., Current Opinion in Biotechnology, vol. 13, pp. 31-39, (2002).
V	X24 \	Brody, E.N., et al., "Aptamers as therapeutic and diagnostic agents"., Reviews in Molecular Biotechnology, vol. 74, pp. 5-13, (2000).

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676	
	Applicant: Yi Lu		····
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635	

			·
7	$\sqrt{}$	X25 ,	Broude, N.E., "Stem-loop oligonucleotides: a robust tool for molecular biology and biotechnology", Trends in Biotechnology, vol. 20, no. 6, pp. 249-256, (2002).
1		X26 ,	Brown, A.K., et al., "A lead-dependent DNAzyme with a two-step mechanism".; Biochemistry, vol. 42, no. 23, pp. 7152-7161, (2003).
		X27 ,	Bruesehoff, P.J., et al., "Improving metal ion specificity during In Vitro selection of catalytic DNA"., Combinatorial Chemistry & High Throughput Screening, vol. 5, pp. 327-335, (2002).
		X28	Bruno, J.G., et al., "In vitro selection of DNA aptamers to anthrax spores with electrochemituminescence detection"., Biosensors & Bioelectronics, vol. 14, pp. 457-464, (1999).
		X29	Bruno, J.G., et al., "Use of magnetic beads in selection and detection of biotoxin aptamers by electrochemiluminescence and enzymatic methods"., BioTechniques, vol. 32, no. 1, pp. 178-180, pp. 182-183, (2002).
		X31 ,	Burdette, S.C., et al., "Fluorescent Sensors for Zn ^{2*} Based on a Fluorescein Platform: Synthesis, Properties and Intracellular Distribution"., J. Am. Chem. Soc., vol. 123, no. 32, pp. 7831-7841, (2001).
	\prod	X32 ,	Burgstaller, P., et al., "Isolation of RNA aptamers for biological cofactors by in vitro selection"., Angew. Chem. Int. Ed. Engl, vol. 33, no. 10, pp. 1084-1087, (1994).
		X33 _	Burgstaller, P., et al., "Structural probing and damage selection of citrulline- and arginine-specific RNA aptamers identify base positions required for binding"., Nucleic Acids Research, vol. 23, no. 23, pp. 4769-4776, (1995).
		X34 、	Burke, D.H., et al., "A Novel Acidophilic RNA Motif That Recognizes Coenzyme A"., Biochemistry, vol. 37, no. 13, pp. 4653-4663, (1998).
		X35	Burke, D.H., et al., "RNA aptamers to the adenosine moiety of S-adenosyl methionine: structural inferences from variations on a theme and the reproducibility of SELEX"., Nucleic Acids Research, vol. 25, no. 10, pp. 2020-2024, (1997).
		X36 🔪	vol. 4, no. 11, pp. 833-843, (1997).
		X37 🔪	Burmeister, J., et al., "Cofactor-assisted self-cleavage in DNA libraries with a 3'- 5'-phosphoramidate bond"., Angew. Chem. Int. Ed. Engl., vol. 36, no. 12, pp. 1321-1324, (1997).
		X38 ,	Burwell Jr., R.L., "Modified silica gels as adsorbents and catalysts"., Chemical Technology, 4, pp. 370-377, (1974).
		X39 ,	Cadwell, R.C., et al., "Mutagenic PCR"., PCR Methods and Applications, vol. 3, pp. S136-S140, (1994).
		X40 •	Cadwell, R.C., et al., "Randomization of genes by PCR mutagenesis"., PCR Methods and Applications, vol. 2, pp, 28-33, (1992).
		X43 ,	Cao, Y.W., et al., "DNA-modified core-shell Ag/Au nanoparticles"., J. Am. Chem. Soc., vol. 123, no. 32, pp. 7961-7962, (2001).
		X44 、	Carmi, N., et al., "Cleaving DNA with DNA"., Proc. Natl. Acad. Sci. USA, vol. 95, pp. 2233-2237, (1998).
		X45	Carmi, N., et al., "In vitro selection of self-cleaving DNAs"., Chemistry & Biology, vol. 3, no. 12, pp. 1039-1046, (1996).
		X46 •	Cech, T.R., "Structure and mechanism of the large catalytic RNAs: group I and group II introns and ribonuclease P"., The RNA World, pp. 239-269, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, (1993).
		X47 ,	Cech, T.R., et al., "Group I ribozymes: substrate recognition, catalytic strategies, and comparative mechanistic analysis"., Nucleic Acids and Molecular Biology, vol. 10, pp. 1-17, (1996).
		X48 •	Chaloin, L., et al., "Endogenous expression of a high-affinity pseudoknot RNA aptamer suppresses replication of HIV-1"., Nucleic Acids Research, vol. 30, no. 18, pp. 4001-4008, (2002).
		X49 ,	Chapman, K.B., et al., "In vitro selection of catalytic RNAs"., Current Opinion in Structural Biology, vol. 4, pp. 618-622, (1994).
		X53 \	Chen, J-H., et al., "A specific quadrilateral synthesized from DNA branched junctions"., J. Am. Chem. Soc., vol. 111, no. 16, pp. 6402-6407, (1989).
		X54 、	Chen, L., et al., "Crystal structure of a four-stranded intercalated DNA: d(C ₄)"., Biochemistry, vol. 33, no. 46, pp. 13540-13546, (1994).
V		X56	Ciesiolka, J., et al., "Selection of an RNA domain that binds Zn ²⁺ "., RNA, vol. 1, pp. 538-550, (1995).

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676	
	Applicant: Yi Lu		
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635	_

TÚ	X57 Ciesiolka, J., et al., "Small RNA-divalent domains"., RNA, vol. 2, pp. 785-793, (1996).
1	X58 Conaty, J., et al., "Selected classes of minimised hammerhead ribozyme have very high cleavage rates at low Mg ²⁺ concentration"., Nucleic Acids Research, vol. 27, no. 11, pp. 2400-2407, (1999).
	X59 Conn, M.M., et al., "Porphyrin Metalation Catalyzed by a Small RNA Molecule"., J. Am. Chem. Soc, vol. 118, no. 29, pp. 7012-7013, (1996).
	X60 Connell, G.J., et al., "RNAs with dual specificity and dual RNAs with similar specificity"., Science, New Series, vol. 264, issue 5162, pp. 1137-1141, (1994).
	X61 Connell, G.J., et al., "Three small ribooligonucleotides with specific arginine sites"., Biochemistry, vol. 32, no. 21, pp. 5497-5502, (1993).
	X62 Cuenoud, B., et al., "A DNA metalloenzyme with DNA ligase activity"., Nature, vol. 375, pp. 611-614, (1995).
	X63 Czarnik, A.W., "Desperately seeking sensors"., Chemistry & Biology, vol. 2, no. 7, pp. 423-428, (1995).
	X64 Dai, X., et al., "Cleavage of an amide bond by a ribozyme"., Science, New Series, vol. 267, issue 5195, pp. 237-240, (1995).
	X65 Davis, J.H., et al., "Isolation of high-affinity GTP aptamers from partially structured RNA libraries"., Proc. Natl. Acad. Sci. USA, vol. 99, no. 18, pp. 11616-11621, (2002).
	Davis, K.A., et al., "Staining of cell surface human CD4 with 2'-F-pyrimidine-containing RNA aptamers for flow cytometry"., Nucleic Acids Research, vol. 26, no. 17, pp. 3915-3924, (1998).
	X67 Definition of the word "ion" printed from Merriam-Webster online dictionary (www.m-w.com) on June 30, 2004.
	X68 Definition of the word "particle" printed from Merriam-Webster online dictionary (www.m-w.com) on June 29, 2004.
	Deo, S., et al., "A Selective, Ratiometric Fluorescent Sensor for Pb2+" J. Am. Chem. Soc., vol. 122, no. 1, pp. 174-175, (2000).
	X70 Derose, V.J., "Two Decades of RNA Catalysis"., Chemistry & Biology, vol. 9, pp. 961-969, (2002).
	X71 Didenko, V.V., "DNA probes using fluorescence resonance energy transfer (FRET): Designs and applications"., BioTechniques, vol. 31, pp. 1106-1118, (2001).
	X72 Doudna, J.A., et al., "The Chemical Repertoire of Natural Ribozymes"., Nature, vol. 418, pp. 222-228, (2002).
	X74 Earnshaw, D.J., et al., "Modified oligoribonucleotides as site-specific probes of RNA structure and function"., Biopolymers (Nucleic Acid Sciences), vol. 48, pp. 39-55, (1998).
	X75 Ekland, E.H., et al., "RNA-catalysed RNA polymerization using nucleoside triphosphates"., Nature, vol. 382, pp. 373-376, (1996).
	X76 Ekland, E.H., et al., "Structurally complex and highly active RNA ligases derived from random RNA sequences"., Science, vol. 269, issue 5222, pp. 364-370, (1995).
	X77 Elghanian, R., et al., "Selective colorimetric detection of polynucleotides based on the distance-dependent optical properties of gold nanoparticles"., Science, vol. 277, pp. 1078-1081, (1997).
	X78 Ellington, A.D., et al., "Aptamers as potential nucleic acid pharmaceuticals"., Biotechnology Annual Review, vol. 1, pp. 185-214, (1995).
	X79 Ellington, A.D., et al., "In vitro selection of RNA molecules that bind specific ligands"., Nature, vol. 346, pp. 818-822, (1990)
	X80 Ellington, A.D., et al., "Selection in vitro of single-stranded DNA molecules that fold into specific ligand-binding structures"., Nature, vol. 355, pp. 850-852, (1992).
	X81 Famulok, M., "Molecular Recognition of Amino Acids by RNA-Aptamers: An L-Citrulline Binding RNA Motif and Its Evolution into an L-Arginine Binder"., J. Am. Chem. Soc., vol. 116, no. 5, pp. 1698-1706, (1994).
	X82 Famulok, M., "Oligonucleotide aptamers that recognize small molecules", Current Opinion in Structural Biology, vol. 9, pp. 324-329, (1999).
V	X83 Famulok, M., et al., "In Vitro Selection Analysis of Neomycin Binding RNAs with a Mutagenized Pool of Variants of the 16S rRNA Decoding Region". Biochemistry, vol. 35, no. 14, no. 4265-4270 (1996)

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

کر	X84 Famulok, M., et al., "Stereospecific recognition of tryptophan agarose by in vitro selected RNA"., J. Am. Chem. Soc., vol. 114, no. 10, pp. 3990-3991, (1992).
	X85 Faulhammer, D., et al., "Characterization and Divalent Metal-ion Dependence of in Vitro Selected Deoxyribozymes which Cleave DNA/RNA Chimeric Oligonucleotides"., J. Mol. Biol., vol. 269, pp 188-202, (1997)
	X86 Faulhammer, D., et al., "The Ca ^{2*} ion as a cofactor for a novel RNA-cleaving deoxyribozyme"., Angew. Chem., Int. Ed. Engl., vol. 35, no. 23/24, pp. 2837-2841, (1996).
·	X89 Fodor, S.P.A., et al., "Light-directed, spatially addressable parallel chemical synthesis"., Science, New Series, vol. 251, issue 4995, pp. 767-773, (1991).
	X90 Frank, D.N., et al., "In vitro selection for altered divalent metal specificity in the RNase P RNA"., Proc. Natl. Acad. Sci. USA, vol. 94, pp. 14355-14360, (1997).
	X91 Frens, G., et al., "Controlled Nucleation for the regulation of the particle size in monodisperse gold suspensions"., Nature Physical Science, vol. 241, pp. 20-22, (1973).
	X92 Fukusaki, E-I., et al., "DNA aptamers that bind to chitin"., Bioorganic & Medicinal Chemistry letters, vol. 10, pp. 423-425, (2000).
	X93 Geiger, A., et al., "RNA aptamers that bind L-arginine with sub-micromolar dissociation constants and high enantioselectivity"., Nucleic Acids Research, vol 24, no. 6, pp. 1029-1036, (1996).
	X94 Geyer, C.R., et al., "Evidence for the metal-cofactor independence of an RNA phosphodiester-cleaving DNA enzyme"., Chemistry & Biology, vol. 4, no. 8, pp. 579-593, `(1997).
	X95 Geyer, C.R., et al., "Lanthanide Probes for a Phosphodiester-cleaving, Lead-dependent, DNAzyme", J. Mol. Biol., vol. 275, pp. 483-489, (1998).
	X96 Giver, L., et al., "Selection and design of high-affinity RNA ligands for HIV-1 Rev"., Gene, vol. 137, pp. 19-24, (1993).
	X97 Giver, L., et al., "Selective optimization of the Rev-binding element of HIV-1", Nucleic Acids Research, vol. 21, no. 23, pp. 5509-5516, (1993).
	X98 Godwin, H.A., et al., "A Flourescent Zinc Probe Based on Metal-Induced Peptide Folding", J. Am. Chem. Soc., vol. 118, pp. 6514-6515, (1996).
	X99 Grabar, K., et al., "Preparation and characterization of Au colloid Monolayers"., Analytical chemistry, vol 67, no. 4, pp. 735-743, (1995).
	X101 Grate, D., et al., "Laser-mediated, site-specific inactivation of RNA transcripts"., Proc. Natl. Acad. Sci. USA, vol. 96, pp. 6131-6136, (1999).
	X102. Guschin, D., et al., "Manual manufacturing of oligonucleotide, DNA, and protein microchips"., Analytical Biochemistry, vol. 250, pp. 203-211, (1997).
	X103 Haller, A.A., et al., "In vitro selection of a 7-methyl-guanosine binding RNA that inhibits translation of capped mRNA molecules"., Proc. Natl. Acad. Sci. USA, vol. 94, pp. 8521-8526, (1997).
	X104 Harada, K., et al., "Identification of two novel arginine binding DNAs"., The EMBO Journal, vol. 14, no. 23, pp. 5798-5811, (1995).
	X107 Hennrich, G., et al., "Redox switchable fluorescent probe selective for either Hg(II) or Cd(II) and Zn(II)" J. Am. Chem. Soc., vol. 121, no. 21, pp. 5073-5074, (1999).
	X108 Hesselberth, J., et al., "In vitro selection of nucleic acids for diagnostic applications"., Reviews in Molecular Biotechnology, vol. 74, pp. 15-25, (2000).
	X109 Hesselberth, J.R., et al., "Simultaneous detection of diverse analytes with an aptazyme ligase array", Analytical Biochemistry vol. 312, pp. 106-112, (2003).
	X110 Ho, H-A., et al., "Optical sensors based on hybrid aptamer/conjugated polymer complexes"., J. Am. Chem. Soc., vol 126, no. 5, pp. 1384-1387, (2004).
	X112 Hofmann, H.P., et al., "Ni ^{2*} -binding RNA motifs with an asymmetric purine-rich internal loop and a G-A base pair"., RNA, vol. 3, pp. 1289-1300, (1997).
	X113 Holeman, L.A., et al., "Isolation and characterization of fluorophore-binding RNA aptamers"., Folding & Design, vol. 3, pp. 423-431, (1998).
	X115 Hoogstraten, C.G., et al., "Structural analysis of metal ion ligation to nucleotides and nucleic acids using pulsed EPR spectroscopy"., J. Am. Chem. Soc., vol. 124, No. 5, pp. 834-842, (2002).
V	X116 Huizenga, D.E., et al., "A DNA aptamer that binds adenosine and ATP"., Biochemistry, vol. 34, no. 2, pp. 656-665, (1995).

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	· · · · · · · · · · · · · · · · · · ·
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

TV	X117	Iler, R.K., "The Chemistry of Silica: Solubility, Polymerization, Colloid and Surface Properties, and Biochemistry, Chapter 6, The surface chemistry of silica"., pp. 622-729, A Wiley-Interscience Publication, New York, (1979).
1	X118	Illangasekare, M., et al., "Small-molecule-substrate interactions with a self-aminoacylating ribozyme"., J. Mol. Biol., vol 268, pp. 631-639, (1997).
	X119	Imperiali, B., et al., "Peptide platforms for metal ion sensing"., Proc. SPIE-The international society for optical engineering, vol. 3858, pp. 135-143, (1999).
	X120	International Search Report dated January 15, 2003 for corresponding PCT application number PCT/US01/20557.
	X121	International Search Report dated August 1, 2003 for corresponding PCT application number PCT/US03/08483.
		Jayasena, S.D., "Aptamers: an emerging class of molecules that rival antibodies in diagnostics"., Clinical Chemistry, vol. 45, no. 9, pp. 1628-1650, (1999).
	X126	Jenison, R., et al., "Interference-based detection of nucleic acid targets on optically coated silicon", Nature Biotechnology, vol. 19, pp. 62-65, (2001).
	X127	(1994).
	X128	Fluorescence-Based Technology"., Nature Biotechnology, vol. 19, pp. 56-61, (2001).
		Jenne, A., et al., "Real-time Characterization of Ribozymes by Fluorescence Resonance Energy Transfer (FRET)"., Angewandte Chemie. International Edition, vol. 38, no. 9, pp. 1300-1303, (1999).
	X130	Jhaveri, S., et al., "In vitro selection of signaling aptamers"., Nature Biotechnology, vol. 18, pp. 1293-1297, (2000).
	X131	fluorescence intensity"., J. Am. Chem. Soc., vol 122, no. 11, pp. 2469-2473, (2000).
	X133 .	Biochemistry, vol. 247, pp. 96-101, (1997).
	X134	Josephson, L., et al., "Magnetic nanosensors for the detection of oligonucleotide sequences"., Angewandte Chemie. International Edition, vol. 40, no. 17, pp. 3204-3206, (2001)
	X135	690, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, (1999).
	1	Joyce, G.F., "In vitro evolution of nucleic acids"., Current Opinion in Structural Biology, vol. 4, pp. 331-336, (1994).
	X138	Kato, T., et al., "In vitro selection of DNA aptamers which bind to cholic acid"., Biochimica et Biophysica Acta, vol. 1493, pp. 12-18, (2000).
	X139	82, pp. 197-206, (2000)
	X142	Kiga, D., et al., "An RNA aptamer to the xanthine/guanine base with a distinctive mode of purine recognition"., Nucleic Acids Research, vol. 26, no. 7, pp. 1755-1760, (1998).
	X144	(1996)
•	X145 \	Kohama, T., et al., "Molecular Cloning and Functional Characterization of Murine Sphingosine Kinase", The Journal of Biological Chemistry, vol. 273, no. 37, pp. 23722-23728, (1998).
-	X146	Koizumi, M., et al., "Allosteric selection of ribozymes that respond to the second messengers cGMP and cAMP"., Nature Structural Biology, vol. 6, no. 11, pp. 1062-1071, (1999).
	X147	Koizumi, M., et al., "Molecular Recognition of cAMP by an RNA Aptamer"., Biochemistry, vol. 39, no. 30, pp. 8983-8992, (2000).
	X150,	
	X151	
V	X153	Lee, M., et al., "A fiber-optic microarray biosensor using aptamers as receptors"., Analytical Biochemistry, vol.

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

TV	X156	^182-185 , (1993).
1		Levy, M., et al., "ATP-Dependent Allosteric DNA Enzymes"., Chemistry & Biology, vol. 9, pp. 417–426, (2002).
	ì	Li, J., et al., "A highly sensitive and selective catalytic DNA biosensor for lead ions"., J. Am. Chem. Soc., vol. 122, no. 42, pp. 10466-10467, (2000).
	X160	Li, J., et al., "In vitro selection and characterization of a highly efficient Zn(II)-dependent RNA-cleaving deoxyribozyme"., Nucleic Acids Research, vol. 28, no. 2, pp. 481-488, (2000).
	X161	Li, J.J., et al., "Using molecular beacons as a sensitive fluorescence assay for enzymatic cleavage of single- stranded DNA"., Nucleic Acids Research, vol. 28, no. 11, e52, pp. i-vi, (2000).
	X162	Li, Y., et al., "A catalytic DNA for porphyrin metallation"., Nature Structural Biology, vol. 3, no. 9, pp. 743-747, (1996).
	X163	Li, Y., et al., "Capping DNA with DNA"., Biochemistry, vol. 19, no. 11, pp. 3106-3114, (2000).
		Li, Y., et al., "Deoxyribozymes: new players in the ancient game of biocatalysis"., Current Opinion in Structural Biology, vol. 9, pp. 315-323, (1999).
	1	Li, Y., et al., "Phosphorylating DNA with DNA"., Proc. Natl. Acad. Sci. USA, vol. 96, pp. 2746-2751, (1999).
	X166	Link, S., et al., "Alloy formation of gold-silver nanoparticles and the dependence of the plasmon absorption on their composition"., J. Phys. Chem. B, vol. 103, no. 18, pp. 3529-3533, (1999).
	X168	Liu, J., et al., "A colorimetric lead biosensor using DNAzyme-directed assembly of gold nanoparticles", J. Am. Chem. Soc., vol. 125, no. 22, pp. 6642-6643, (2003).
		Liu, J., et al., "Accelerated color change of gold nanoparticles assembled by DNAzymes for simple and fast colorimetric Pb ²⁺ detection"., J. Am. Chem. Soc., vol. 126, no. 39, pp. 12298-12305, (2004).
·		Liu, J., et al., "Adenosine-dependent assembly of aptazyme-functionalized gold nanoparticles and its application as a colorimetric biosensor"., Analytical Chemistry, vol. 76, no. 6, pp. 1627-1632, (2004).
		Liu, J., et al., "Colorimetric biosensors based on DNAzyme-assembled gold nanoparticles"., Journal of Fluorescence, vol. 14, no. 4, pp. 343-354, (2004).
	1	Liu, X., et al., "A fiber-optic evanescent wave DNA biosensor based on novel molecular beacons"., Analytical Chemistry, vol. 71, no. 22, pp. 5054-5059, (1999).
	X175	Lohse, P.A., et al., "Ribozyme-catalysed amino-acid transfer reactions"., Nature, vol. 381, pp. 442-444, (1996).
		Lorsch, J.R., et al., "In vitro evolution of new ribozymes with polynucleotide kinase activity"., Nature, vol. 371, pp. 31-36, (1994).
	X177	Lorsch, J.R., et al., "In vitro selection of RNA aptamers specific for cyanocobalamin"., Biochemistry, vol. 33, no. 4, pp. 973-982, (1994).
	X178\	Lott, W.B., et al., "A two-metal ion mechanism operates in the hammerhead ribozyme-mediated cleavage of an RNA substrate", Proc. Natl. Acad. Sci. USA, vol. 95, pp. 542-547, (1998).
	X179	Lu, Y., "New transition-metal-dependent DNAzymes as efficient endonucleases and as selective metal biosensors"., Chem. Eur. J., vol. 8, no. 20, pp. 4589-4596, (2002).
	X180	Lu, Y., et al., "New fluorescent and colorimetric DNAzyme biosensors for metal ions", Journal of Inorganic Biochemistry, vol. 96, issue 1, pp. 30, Abstract of the 11 th International Conference on Biological Inorganic Chemistry; (July 15, 2003).
-	X181	Majerfeld, I., et al., "An RNA pocket for an aliphatic hydrophobe"., Structural Biology, vol. 1, no. 5, pp. 287-292, (1994).
	X182	Majerfeld, I., et al., "Isoleucine:RNA sites with associated coding sequences"., RNA, vol. 4, pp. 471-478, (1998).
	X184	Mannironi, C., et al., "In vitro selection of dopamine RNA ligands"., Biochemistry, vol. 36, no. 32, pp. 9726-9734, (1997).
	X185	Maoz, R., et al., "Penetration-controlled reactions in organized monolayer assemblies. 1. Aqueous permanganate interaction with monolayer and multilayer films of long-chain surfactants"., Langmuir, vol. 3, no. 6, pp. 1034-1044, (1987).
<u> </u>		

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

V	X187	Marsh, T.C., et al., "A new DNA nanostructure, the G-wire, imaged by scanning probe microscopy"., Nucleic Acids Research, vol. 23, no. 4, pp. 696-700, (1995).
	X189	Matteucci, M.D., et al., "Synthesis of Deoxyoligonucleotides on a polymer support"., J. Am. Chem. Soc., vol. 103, no. 11, pp. 3185-3191, (1981).
	X197	Nature, vol. 382, pp. 607-609, (1996).
	X198	(1994).
	X199	Miyawaki, A., et al. "Fluorescent indicators for Ca2" based on green fluorescent proteins and calmodulin"., Nature, vol. 388, pp. 882-887, (1997).
		Mucic, R.C., et al., "Synthesis and characterization of DNA with ferrocenyl groups attached to their 5'-termini: electrochemical characterization of a redox-active nucleotide monolayer"., Chem. Commun., pp. 555-557, (1996).
		Nissen, P., et al., "The structural basis of ribosome activity in peptide bond synthesis"., Science, vol. 289, pp. 920-930, (2000).
		Nolte, A., et al., "Mirror-design of L-oligonucleotide ligands binding to L-arginine"., Nature Biotechnology, vol. 14, pp. 1116-1119, (1996).
	X209	Nutiu, R., et al., "Structure-switching signaling aptamers", J. Am. Chem. Soc., vol. 125, no. 16, pp. 4771-4778, (2003).
	X210	Nuzzo, R.G., et al., "Spontaneously organized molecular assemblies. 3. Preparation and properties of solution adsorbed monolayers of organic disulfides on gold surfaces"., J. Am. Chem. Soc., vol. 109, no. 8, pp. 2358-2368, (1987).
	X211_	O'Donnell, M.J., et al., "High-Density, Covalent Attachment of DNA to Silicon Wafers for Analysis by MALDI-TOF Mass Spectrometry"., Analytical Chemistry, vol. 69, no. 13, pp. 2438-2443, (1997).
	X212	Oehme, I., et al., "Optical sensors for determination of heavy metal ions"., Mikrochim. Acta, vol. 126, pp. 177-192, (1997).
	X214~	Ohmichi, T., et al., "Effect of substrate RNA sequence on the cleavage reaction by a short ribozyme"., Nucleic Acids Research, vol. 26, no. 24, pp. 5655-5661, (1998).
	X215	Okazawa, A., et al., "In vitro selection of hematoporphyrin binding DNA aptamers"., Bioorganic & Medicinal Chemistry, Letters 10, pp. 2653-2656, (2000).
	· X216	Ota, N., et al., "Effects of helical structures formed by the binding arms of DNAzymes and their substrates on catalytic activity"., Nucleic Acids Research, vol. 26, no. 14, pp. 3385-3391, (1998).
	X217	Pan, T., et al., "A small metalloribozyme with a two-step mechanism"., Nature, vol. 358, pp. 560-563, (1992).
		Pan, T., et al., "In vitro selection of RNAs that undergo autolytic cleavage with Pb ²⁺ "., Biochemistry, vol. 31, no. 16, pp. 3887-3895, (1992).
	X219 \	Pan, T., et al., "Properties of an in vitro selected Pb2+ cleavage motif"., Biochemistry, vol. 33, no. 32, pp. 9561-9565, (1994).
	X224\	Pavlov, V., et al., "Aptamer-functionalized au nanoparticles for the amplified optical detection of thrombin"., J. Am. Chem. Soc., vol 126, no. 38, pp. 11768-11769, (2004).
	X225	Pearce, D.A., et al., "Peptidyl chemosensors incorporating a FRET mechanism for detection of Ni(II)"., Bioorganic & Medicinal Chemistry, Letters 8, pp. 1963-1968, (1998).
	X226	Pease, A.C., et al., "Light-generated oligonucleotide arrays for rapid DNA sequence analysis"., Proc. Natl. Acad. Sci. USA, vol. 91, pp. 5022-5026, (1994).
	X227	Piccirilli, J.A., et al., "Aminoacyl esterase activity of the tetrahymena ribozyme"., Science, New Series, vol. 256, issue 5062, pp. 1420-1424, (1992).
		Pley, H.W., et al., "Three-dimensional structure of a hammerhead ribozyme"., Nature, vol. 372, pp. 68-74, (1994).
	X229	Potyrailo, R.A., et al., "Adapting selected nucleic acid ligands (aptamers) to biosensors"., Analytical Chemistry, vol. 70, no. 16, pp. 3419-3425, (1998).
1	X230	

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

N	X232	Rabinowitz, M., et al., "Home refinishing, lead paint, and infant blood lead levels"., American Journal of Public Health, vol. 75, no. 4, pp. 403-404, (1985).
)	X233	Throughput Screening, vol. 5, no. 4, pp. 263-270, (2002).
	X234	Rakow, N.A., et al., "A colorimetric sensor array for odour visualization"., Nature, vol. 406, pp. 710-713, (2000).
		Rink, S.M., et al., "Creation of RNA molecules that recognize the oxidative lesion 7,8-dihydro-8-hydroxy-2'- deoxyguanosine (8-oxodG) in DNA"., Proc. Natl. Acad. Sci. USA, vol. 95, pp. 11619-11624, (1998).
	X236	Robertson, M.P., et al., "Design and optimization of effector-activated ribozyme ligases"., Nucleic Acids Research, vol. 28, no. 8, pp. 1751-1759, (2000).
		Robertson, M.P., et al., "In vitro selection of an allosteric ribozyme that transduces analytes to amplicons"., Nature Biotechnology, vol. 17, pp. 62-66, (1999).
		Roth, A., et al., "An amino acid as a cofactor for a catalytic polynucleotide"., Proc. Natl. Acad. Sci. USA, vol. 95, pp. 6027-6031, (1998).
	X241	Rurack, K., et al., "A selective and sensitive fluoroionophore for Hg", Ag', and Cu" with virtually decoupled fluorophore and receptor units"., J. Am. Chem. Soc., vol. 122, no. 5, pp. 968-969, (2000).
	X242	Rusconi, C.P., et al., "RNA aptamers as reversible antagonists of coagulation factor Ixa"., Nature, vol. 419, pp. 90-94, (2002).
	X243\	Sabanayagam, C.R., et al., "Oligonucleotide immobilization on micropatterened streptavidin surfaces"., Nucleic Acids Research, vol. 28, no. 8, e33, pp. i-iv, (2000).
		Santoro, S.W. et al., "Mechanism and utility of an RNA-cleaving DNA enzyme", Biochemistry, vol. 37, no. 38, pp. 13330-13342, (1998).
		Santoro, S.W., et al., "A general purpose RNA-cleaving DNA enzyme"., Proc. Natl. Acad. Sci. USA, vol. 94, pp. 4262-4266, (1997).
	X246	Santoro, S.W., et al., "RNA Cleavage by a DNA Enzyme with Extended Chemical Functionality"., J. Am. Chem. Soc., vol. 122, no. 11, pp. 2433-2439, (2000).
	X247	Sassanfar, M., et al., "An RNA motif that binds ATP"., Nature, vol. 364, pp. 550-553, (1993).
	X248	no. 1, pp. 1-7, (1991).
V	X249 N	Scott, W.G., et al., "The crystal structure of an all-RNA hammerhead ribozyme: A proposed mechanism for RNA catalytic cleavage"., Cell, vol. 81, pp. 991-1002, (1995).
	X251	Search results of key word search of mediline, March 28, 2000.
	- X252	Search results of key word search on Chemical Abstracts, March 24, 2009.
	- X253	Search results of key word search from various databases, March 24, 2000.
TV	X254	Seeman, N.C., et al., "Synthetic DNA knots and catenanes"., New Journal of Chemistry, vol. 17, pp. 739-755, (1993).
1	X257~	Seetharaman, S., et al., "Immobilized RNA switches for the analysis of complex chemical and biological mixtures"., Nature Biotechnology, vol. 19, pp. 336-341, (2001).
1	X258\	
1	X259	Nucleic Acids Research, vol. 21, no. 1, pp. 99-103, (1993).
	X260	······································
T	X261	Shekhtman, E.M., et al., "Stereostructure of replicative DNA catenanes from eukaryotic cells"., New Journal of Chemistry, vol. 17, pp. 757-763, (1993).

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

TV	X262 Sigurdsson, S.T., et al., "Small ribozymes"., RNA Structure and Function, Cold Spring Harbor Laboratory Press (Monograph 35), pp. 339-375, (1998).
	X264 Singh, K.K., et al., "Fluorescence Polarization for Monitoring Ribozyme Reactions in Real-Time"., Biotechniques vol. 29, no. 2, pp. 344-351, (2000).
	X265 Smith, F.W., et al., "Quadruplex structure of oxytricha telomeric DNA oligonucleotides"., Nature, vol. 356, pp. 164-168, (1992).
	X266 Smith, J.O., et al., "Molecular recognition of PNA-containing hybrids: Spontaneous assembly of helical cyanine dye aggregates on PNA templates"., J. Am. Chem. Soc., vol. 121, no. 12, pp. 2686-2695, (1999).
	X267 Soriaga, M.P., et al., "Determination of the orientation of aromatic molecules adsorbed on platinum electrodes: The effect of solute concentration"., J. Am. Chem. Soc., vol. 104, no. 14, pp. 3937-3945, (1982).
	X269 Soukup, G.A., et al., "Allosteric nucleic acid catalysts"., Current Opinion in Structural Biology, vol. 10, pp. 318-325 (2000).
	X271 Stage-Zimmermann, T.K., et al., "Hammerhead ribozyme kinetics"., RNA, vol. 4, pp. 875-889, (1998).
	X272. Stojanovic, M.N., et al., "Aptamer-based colorimetric probe for cocaine"., J. Am. Chem. Soc., vol. 124, no. 33, pp 9678-9679, (2002).
	X273 Stojanovic, M.N., et al., "Aptamer-based folding fluorescent sensor for cocaine"., Journal of the American Chemical Society, vol. 123, no. 21, pp. 4928-4931, (2001).
	X274 Stojanovic, M.N., et al., "Fluorescent sensors based on aptamer self-assembly"., Journal of the American Chemica Society, vol. 122, no. 46, pp. 11547-11548, (2000).
	X278 Storhoff, J.J., et al., "One-pot colorimetric differentiation of polynucleotides with single base imperfections using gold nanoparticle probes"., Journal of the American Chemical Society, vol. 120, no. 9, pp. 1959-1964, (1998).
	X281 Sun, L.Q., et al., "Catalytic nucleic acids: From lab to applications"., Pharmacological Reviews, vol. 52, pp. 325-347, (2000).
	X284 Tang, J., et al., "Rational design of allosteric ribozymes"., Chemistry & Biology, vol. 4, no. 6, pp. 453-459, (1997).
	X285 Tang, J., et al., "Structural diversity of self-cleaving ribozymes"., Proc. Natl. Acad. Sci. USA, vol. 97, no. 11, pp. 5784-5789, (2000).
	X286 Tanner, N.K., "Biochemistry of hepatitis delta virus catalytic RNAs"., Ribozymes in the Gene Therapy of Cancer, Chapter 3, pp. 23-38, (1998).
	X287 Tao, J., et al., "Arginine-Binding RNAs Resembling TAR Identified by in Vitro Selection"., Biochemistry, vol. 35, no. 7, pp. 2229-2238, (1996).
	X288 Tarasow, T.M., et al., "RNA-catalysed carbon-carbon bond formation"., Nature; vol 389, pp. 54-57, (1997).
	X290 Thompson, R.B., et al., "Determination of Picomolar Concentrations of Metal Ions Using Fluorescence Anisotropy: Biosensing with a "Reagentless" Enzyme Transducer"., Analytical Chemistry, vol. 70, no. 22, pp. 4717-4723, (1998).
	X291 Timmons, C.O., et al., "Investigation of Fatty Acid Monolayers on Metals by Contact Potential Measurements", Journal of Physical Chemistry, vol. 69, no. 3, pp. 984-990, (1965).
	X292 Tompkins, H.G., et al., "The study of the gas-solid interaction of acetic acid with a cuprous oxide surface using reflection-absorption spectroscopy"., Journal of Colloid and Interface Science, vol. 49, no. 3, pp, 410-421, (1974).
	X293 Travascio, P., et al., "A ribozyme and a catalytic DNA with peroxidase activity: active sites versus cofactor-binding sites"., Chemistry & Biology, vol. 6, no. 11, pp. 779-787, (1999).
	X294. Tsang, J., et al., "In vitro evolution of randomized ribozymes"., Methods in Enzymology, vol. 267, pp. 410-426, (1996).
	X296 Tuerk, C., et al., "RNA pseudoknots that inhibit human immunodeficiency virus type 1 reverse transcriptase"., Proc. Natl. Acad. Sci. USA, vol. 89, pp. 6988-6992, (1992).
	X297 Tuerk, C., et al., "Systematic evolution of ligands by exponential enrichment: RNA ligands to bacteriophage T4 DNA polymerase"., Science, New Series, vol. 249, issue 4968, pp. 505-510, (1990).
V	X298 Tyagi, S., et al., "Molecular Beacons: Probes that fluoresce upon hybridization"., Nature Biotechnology, vol. 14, pp. 303-308, (1996).

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

V	X299 Tyagi, S., et al., "Multicolor molecular beacons for allele discrimination"., Nature Biotechnology, vol 16, pp. 49-53, (1998).
	X302 Uphoff, K.W., et al., "In vitro selection of aptamers: the dearth of pure reason"., Current Opinion in Structural Biology, vol. 6, pp. 281-288, (1996).
	X303 Vaish, N.K., et al., "In vitro selection of a purine nucleotide-specific hammerhead-like ribozyme"., Proc. Natl. Acad Sci. USA, vol. 95, pp. 2158-2162, (1998).
	X304 Valadkhan, S., et al., "Splicing-related catalysis by protein-free snRNAs"., Nature, vol 413, pp. 701-707, (2001)
	X305 Vianini, E., et al., "In vitro selection of DNA aptamers that bind L-tyrosinamide"., Bioorganic & Medicinal Chemistry, vol. 9, pp. 2543-2548, (2001).
	X306 Walkup, G.K., et al., "Design and Evaluation of a Peptidyl Fluorescent Chemosensor for Divalent Zinc"., J. Am. Chem. Soc., vol. 118, no. 12, pp. 3053-3054, (1996).
	X307 Wallace, S.T., et al., "In vitro selection and characterization of streptomycin-binding RNAs: recognition discrimination between antibiotics. RNA, vol 4, pp. 112-123, (1998).
	X308 Wallis, M.G., et al., "A novel RNA motif for neomycin recognition"., Chemistry & Biology, vol. 2, no. 8, pp. 543-552, (1995).
	X309 Wallis, M.G., et al., "In vitro selection of a viomycin-binding RNA pseudoknot"., Chemistry & Biology, vol. 4, no. 5, pp. 357-366, (1997).
	X310 Walter, F., et al., "Folding of the four-way RNA junction of the hairpin ribozyme", Biochemistry, vol. 37, no. 50, pp. 17629-17636, (1998).
	X311 Walter, N.G., et al., "The hairpin ribozyme: structure, assembly and catalysis"., Current Opinion in Chemical Biology, vol. 2, pp. 24-30, (1998).
	X312 Wang, D.Y., et al., "A general strategy for effector-mediated control of RNA-cleaving ribozymes and DNA enzymes"., J. Mol. Biol., vol. 318, pp. 33-43, (2002).
	X313 Wang, F., et al., "Sphingosine-1-phosphate Inhibits Motility of Human Breast Cancer Cells Independently of Ce Surface Receptors"., Cancer Research, vol. 59, pp. 6185-6191, (1999).
	X314 Wang, J., "Survey and Summary: From DNA biosensors to gene chips"., Nucleic Acids Research, vol. 28, no. 16, pp. 3011-3016, (2000).
	X315 Wang, K.Y., et al., "A DNA aptamer which binds to and inhibits thrombin exhibits a new structural motif for DNA"., Biochemistry, vol. 32, no. 8, pp. 1899-1904, (1993).
	X316 Wang, Y., et al., "Assembly and characterization of five-arm and six-arm DNA branched junctions"., Biochemistry, vol. 30, pp. 5667-5674, (1991).
	X317 Wang, Y., et al., "RNA molecules that specifically and stoichiometrically bind aminoglycoside antibiotics with high affinities"., Biochemistry, vol. 35, no. 38, pp. 12338-12346, (1996).
	X318 Wecker, M., et al., "In vitro selection of a novel catalytic RNA: characterization of a sulfur alkylation reaction and interaction with a small peptide"., RNA, vol. 2, pp. 982-994, (1996).
	X319 Wedekind, J.E., et al., "Crystal structure of a lead-dependent ribozyme revealing metal binding sites relevant to catalysis"., Nature Structural Biology, vol. 6, no. 3, pp. 261-268, (1999).
	X320 Wedekind, J.E., et al., "Crystal structure of the leadzyme at 1.8 Å Resolution: Metal ion binding and the implications for catalytic mechanism and allo site ion regulation"., Biochemistry, vol. 42, no. 32, pp. 9554-9563, (2003).
	X321 Wells, R.D., "Unusual DNA structures"., Journal of Biological Chemistry, vol. 263, no. 3, pp. 1095-1098, (1988)
7	X322 Werstuck, G., et al., "Controlling gene expression in living cells through small molecule-RNA interactions"., Science, vol. 282, pp. 296-298, (1998).
	X324 Whitesides, G.M., et al., "Self-assembled mohnolayers and lithography"., Proceedings of the Robert A. Welch Foundation 39th Conference On Chemical Research on Nanophase Chemistry, pp. 109-121, Houston, TX, October 23-24, 1995.
	X326 Wiegand, T.W., et al., "Selection of RNA amide synthases"., Chemistry & Biology, vol. 4, no. 9, pp. 675-683, (1997).
V	X327 Williams, K.P., et al., "Bioactive and nuclease-resistant L-DNA ligand of vasopressin"., Proc. Natl. Acad. Sci. USA, vol. 94, pp. 11285-11290, (1997).

Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676	
	Applicant: Yi Lu	· · · · · · · · · · · · · · · · · · ·	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635	

71	X328	Williams, K.P., et al., "Selection of novel Mg ^{2*} -dependent self-cleaving ribozymes" The EMBO Journal, vol. 14, no. 18, pp. 4551-4557, (1995).
1	X329	Wilson, C., et al., "Functional requirements for specific ligand recognition by a biotin-binding RNA Pseudoknot"., Biochemistry, vol. 37, no. 41, pp. 14410-14419, (1998).
	X330	Wilson, C., et al., "In vitro evolution of a self-alkylating ribozyme"., Nature, vol. 374, pp. 777-782, (1995).
	X331	Wilson, C., et al., "Isolation of a fluorophore-specific DNA aptamer with weak redox activity"., Chemistry & Biology, vol. 5, no. 11, pp. 609-617, (1998).
	X332	Wilson, D.S., et al., "In vitro selection of functional nucleic acids"., Annu. Rev. Biochem. vol. 68, pp. 611-647, (1999).
	X333_	Winkler, J.D., et al., "Photodynamic Fluorescent Metal Ion Sensors with Parts per Billion Sensitivity"., J. Am. Chem. Soc., vol. 120, no. 13, pp. 3237-3242, (1998).
	X335_	Xia, P., et al., "Activation of Sphingosine Kinase by Tumor Necrosis Factor-α Inhibits Apoptosis in Human Endothelial Cells"., Journal of Biological Chemistry, vol. 274, no. 48, pp. 34499-34505, (1999).
	X337~	Yang, Q., et al., "DNA ligands that bind tightly and selectively to cellobiose"., Proc. Natl. Acad. Sci. USA, vol. 95, pp. 5462-5467, (1998).
	X339	Yurke, B., et al., "A DNA-fuelled molecular machine made of DNA"., Nature, vol. 406, pp. 605-608, (2000).
	X340	Zhang, B., et al., "Peptide bond formation by in vitro selected ribozymes"., Nature, vol. 390, pp. 96-100, (1997).
	X341_	Zhang, P., et al., "Design of a molecular beacon DNA probe with two fluorophores"., Angewandte Chemie International Edition, vol. 40, no. 2, pp. 402-405, (2001).
	X342	Zillmann, M., et al., "In vitro optimization of truncated stem-loop II variants of the hammerhead ribozyme for cleavage in low concentrations of magnesium under non-turnover conditions"., RNA, vol. 3, pp. 734-747, (1997).
	X343\	Zimmerman, J.M., et al., "In vivo selection of spectinomycin-binding RNAs"., Nucleic Acids Research, vol. 30, no. 24, pp. 5425-5435, (2002).
V	X344	Zimmermann, G.R., et al., "Molecular interactions and metal binding in the theophylline-binding core of an RNA aptamer"., RNA, vol. 6, pp. 659-667, (2000).

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Form PTO-1449 (Rev.,8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
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			U.S. PA	ATENT DOCUMENTS			
Examiner Initials*		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
TV	Z11 ~	5,663,064	09/1997	Burke, et al.			
7	Z12 \	6,110,462	08/2000	Barbas, et al.		<u> </u>	
	Z13 \	6,630,306	10/2003	Breaker			
1.	Z14 \	2003/0215810	11/2003	Lu, et al.		 	

FOREIGN PATENT DOCUMENTS

Examiner Initials*							Trans	lation
muais		Document Number	Date	Country	Class	Subclass	Yes	No
70	Y15	WO 02/22882	03/2002	wo				
1	Y16	WO 03/068963	08/2003	wo				
	Y17	WO 03/095648	11/2003	wo				
	Y18	2004/081235	09/2004	wo				
	Y19	EP 1 312 674	05/2003	EP			l	
	Y20	WO 01/73123	10/2001	wo				
	Y21	WO 01/51665	07/2001	wo				
	Y22	WO 01/00876	01/2001	wo				
1	Y23	WO 98/04740	02/1998	wo				

Examiner Initials*		OTHER ITEMS - NON PATENT LITERATURE DOCUMENTS Include, as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
TU	X2 _	Aggarwal, S.K., et al., "Determination of lead in urine and whole blood by stable isotope dilution gas chromatography-mass spectrometry"., Clinical Chemistry, vol. 40, no. 8, pp. 1494-1502, (1994).
}	Х3 _	Alivisatos, A.P., et al., "Organization of "nanocrystal molecules" using DNA"., Nature, vol. 382, pp. 609-611, (1996).
	X7 ~	Bannon, D.I., et al., "Graphite furnace atomic absorption spectroscopic measurement of blood lead in matrix-matched standards"., Clinical Chemistry, vol. 40, no. 9, pp. 1730-1734, (1994).
	Х9 ~	Berens, C., et al., "A tetracycline-binding RNA aptamer"., Bioorganic & Medicinal Chemistry, vol. 9, pp. 2549- 2556, (2001).
	X16 ~	Bowins, R.J., et al., "Electrothermal isotope dilution inductively coupled plasma mass spectrometry method for the determination of sub-ng mi ⁻¹ levels of lead in human plasma"., Journal of Analytical Atomic Spectrometry, vol. 9, pp. 1233-1236, (1994).

Form PTO-1449 (Rev.,8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

TV	X18 Breaker, R.R., "DNA aptamers and DNA enzymes" Current Opinion in Chemical Biology, vol. 1, pp. 26-31, (1997).
}	X30 Brust, M., et al., "Novel gold-dithiol nano-networks with non-metallic electronic properties"., Advanced Materials, vol. 7, no. 9, pp. 795-797, (1995)
	X41 Cake, K.M., et al., "In vivo x-ray fluorescence of bone lead in the study of human lead metabolism: serum lead, whole blood lead, bone lead, and cumulative exposure"., Advances in X-Ray Analysis, vol. 38, pp. 601-606, (1995).
	X42 Camara Rica, C., et al., "Determination of trace concentrations of lead and nickel in human milk by electrothermal atomisation atomic absorption spectrophotometry and inductively coupled plasma emission spectroscopy"., The Science of the Total Environment, vol. 22, pp. 193-201, (1982).
	X50 Chartrand, P., et al., "Effect of structural modifications on the activity of the leadzyme"., Biochemistry, vol. 36, no. 11, pp. 3145-3150, (1997).
	X51 Chen, J., et al., "Synthesis from DNA of a molecule with the connectivity of a cube"., Nature, vol. 350, pp. 631-633, (1991).
	X52 Chen, C-T., et al., "A highly selective fluorescent chemosensor for lead ions"., J. Am. Chem. Soc., vol. 124, pp. 6246-6247, (2002).
	X55 Chinnapen, D.J.F., et al., "Hemin-stimulated docking of cytochrome c to a heminDNA aptamer complex"., Biochemistry, vol. 41, no. 16, pp. 5202-5212, (2002).
	X73 Dubois, L.H., et al., "Synthesis, structure, and properties of model organic surfaces"., Annu. Rev. Phys. Chem., vol. 43, pp. 437-463, (1992).
	X87 Feldman, B.J., et al., "Determination of lead in blood by square wave anodic stripping voltammetry at a carbon disk ultramicroelectrode"., Analytical Chemistry, vol. 66, no. 13, pp. 1983-1987, (1994).
	X88 Ferguson, A., et al., "A novel strategy for selection of allosteric ribozymes yields riboreporter ^{1M} sensors for caffeine and aspartame"., Nucleic Acids Research, vol. 32, no. 5, pp. 1756-1766, (2004).
	X100 Granadillo, V.A., et al., "The influence of the blood levels of lead, aluminum and vanadium upon the arterial hypertension"., Clinica Chimica Acta, vol. 233, pp. 47-59, (1995).
	X105 Hartig, J.S., et al., "Reporter ribozymes for real-time analysis of domain-specific interactions in biomolecules: HIV-1 reverse transcriptase and the primer-template complex"., Angew. Chem. Int. Ed., vol. 41, no. 22, pp. 4263-4266, (2002).
	X106. He, X-x., et al., "Bioconjugated nanoparticles for DNA protection from cleavage"., J. Am. Chem. Soc., vol. 125, no. 24, pp. 7168-7169, (2003).
	X111 Hock, B., "Antibodies for immunosensors, A review"., Analytica Chimica Acta, vol. 347, pp. 177-186, (1997).
	X114 Hoogstraten, C.G., et al., "NMR solution structure of the lead-dependent ribozyme: Evidence for dynamics in RNA catalysis"., J. Mol. Biol., vol. 284, pp. 337-350, (1998)
	X122 \ Iqbal, S.S., et al., "A review of molecular recognition technologies for detection of biological threat agents"., Biosensors & Bioelectronics, vol. 15, pp. 549-578, (2000).
	X124 Jagner, D., et al., "Determination of lead in microliter amounts of whole blood by stripping potentiometry"., Electroanalysis, vol. 6, pp. 285-291, (1994).
	X132. Jin, R., et al., "What controls the melting properties of DNA-linked gold nanoparticle assemblies?"., J. Am. Chem. Soc., vol. 125, no. 6, pp. 1643-1654, (2003).
	X137 Katahira, M., et al., "Two metal-binding sites in a lead ribozyme bound to competitively by Pb ²⁺ and Mg ²⁺ : Induced structural changes as revealed by NMR"., European Journal of Biochemistry, vol. 255, pp. 727-733, (1998).
	X140 Khan, R., et al., "Interaction of retroviral nucleocapsid proteins with transfer RNA he: a lead ribozyme and H NMR study"., Nucleic Acids Research, vol. 24, no. 18, pp. 3568-3575, (1996).
	X141 Khosraviani, M., et al., "Detection of heavy metals by immunoassay: Optimization and validation of a rapid, portable assay for ionic cadmium"., Environ. Sci. Technol., vol. 32, no. 1, pp. 137-142, (1998).
	X143 Kim, M.H., et al., "Activation and repression of the activity of a lead ribozyme by the combination of Pb ²⁺ and Mg ²⁺¹ "., J. Biochem., vol. 122, no. 5, pp. 1062-1067, (1997).
V	X148 Koizumi, M., et al., "Allosteric ribozymes sensitive to the second messengers cAMP and cGMP"., Nucleic Acids Symposium Series, no. 42, pp. 275-276, (1999).

Form PTO-1449 (Rev., 8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676	
	Applicant: Yi Lu		
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635	-

M	X149 Kruger, K., et al., "Self-splicing RNA: autoexcision and autocyclization of the ribosomal RNA intervening sequence of the Tetrahymena"., Cell, vol. 31, pp. 147-157, (1982).
1	X152 Lebruska, L.L., "Selection and Characterization of an RNA Decoy for Transcription Factor NF-kB"., Biochemistry vol. 38, no. 10, pp. 3168-3174, (1999).
	X154 Lee, S-W., et al., "Ordering of quantum dots using genetically engineered viruses"., Science, vol. 296, pp. 892-895, (2002).
	X155 Legault, P., et al., "Order, dynamics and metal-binding in the lead-dependent ribozyme"., J. Mol. Biol., vol. 284, pp. 325-335, (1998).
	X157 Lemieux, S., et al., "Modeling active RNA structures using the intersection of conformational space: application to the lead-activated ribozyme"., RNA, vol. 4, pp. 739-749, (1998).
	X167 Liu, H-W., et al., "Determination of cadmium, mercury and lead in seawater by electrothermal vaporization isotope dilution inductively coupled plasma mass spectrometry"., Spectrochimica Acta Part B Atomic Spectroscopy 54, pp. 1367-1375, (1999).
	X172 Liu, J., et al., "Highly dispersible molecular sieve carbon nanoparticles"., Chem. Mater., vol. 16, no. 22, pp. 4205 4207, (2004).
	X174 Liu, Z., et al., "Assemblage of signaling DNA enzymes with intriguing metal-ion specificities and pH dependences"., J. Am. Chem. Soc., vol. 125, no. 25, pp. 7539-7545, (2003).
	X186 Marcus, A.H., et al., "Estimating the contribution of lead based paint to soil lead, dust lead, and childhood blood lead"., American Society for Testing and Materials Spec. STP 1226, pp. 12-23, (1995).
	X190 Mecklenburg, M., et al., "A strategy for the broad range detection of compounds with affinity for nucleic acids"., Analytica Chimica Acta, vol. 347, pp 79-86, (1997).
	X191 Mei, S.H.J., et al., "An efficient RNA-cleaving DNA enzyme that synchronizes catalysis with fluorescence signaling"., J. Am. Chem. Soc., vol. 125, no. 2, pp. 412-420, (2003).
	X192 Meli, M., et al., "Adenine-aptamer complexes: A bipartite RNA site that binds the adenine nucleic base"., The Journal of Biological Chemistry, vol. 277, no. 3, pp. 2104-2111, (2002).
	X201 Mullah, B., et al., "Automated synthesis of double dye-labeled oligonucleotides using tetramethylrhodamine (TAMRA) solid supports"., Tetrahedron Letters, vol. 38, no. 33, pp. 5751-5754, (1997).
	X202 Nazarenko, I.A., et al., "A closed tube format for amplification and detection of DNA based on energy transfer"., Nucleic Acids Research, vol. 26, no. 12, pp. 2516-2521, (1997).
	X203 Nazarenko, I.A., et al., "Defining a Smaller RNA Substrate for Elongation Factor Tu"., Biochemistry, vol. 34, no. 8, pp. 2545-2552, (1995).
	X205 Niemeyer, C.M., "Nanoparticles, proteins, and nucleic acids: Biotechnology meets materials science"., Angew. Chem. Int. Edition, vol. 40, pp. 4128-4158, (2001).
	X206 Nieuwlandt, D., et al., "In Vitro Selection of RNA Ligands to Substance P°., Biochemistry, vol. 34, no. 16, pp. 5651-5659, (1995).
	X213 Ohmichi, T., et al., "Role of Nd3+ and Pb2+ on the RNA cleavage reaction by a small ribozyme"., Biochemistry, vol. 36, no. 12, pp. 3514-3521, (1997).
	X220 Pan, W., et al., "Isolation of virus-neutralizing RNAs from a large pool of random sequences"., Proc. Natl. Acad. Sci. USA, vol. 92, pp. 11509-11513, (1995).
	X224 Park, S-J., et al., "Array-based electrical detection of DNA with nanoparticle probes"., Science, vol. 295, pp. 1503-1506, (2002).
	X222 Parsons, P.J., et al., "A rapid Zeeman graphite furnace atomic absorption spectrometric method for the determination of lead in blood"., Spectrochimica Acta, vol. 48B, no. 6/7, pp. 925-939, (1993).
	X223 Pavlov, A.R., et al., *Determination of lead in environmental water samples by a rapid and portable immunoassay"., ANYL, Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000
	X231 Qiao, H., et al., "Transferability of blood lead determinations by furnace atomic absorption spectrophotometry and continuum background correction"., Clinical Chemistry, vol. 41, no. 10, pp. 1451-1454, (1995).
	X239 Roychowdhury-Saha, M., et al., "Flavin Recognition by an RNA Aptamer Targeted toward FAD"., Biochemistry, vol. 41, no. 8, pp. 2492-2499, (2002).

Form PTO-1449 (Rev.,8-88)	Attorney Docket No. ILL05-040-DIV-US	Serial No. 10/702,676
	Applicant: Yi Lu	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635

· - 1	X240 Ruckman, J., et al., "2'-Fluoropyrimidine RNA-based aptamers to the 165-amino acid	form of vascular
	endothelial growth factor (VEGF ₁₆₅) Inhibition of receptor binding and VEGF-induced	
JV	through interactions requiring the exon 7-encoded domain. The Journal of Biologica	
10	32, pp. 20556-20567, (1998).	
	X250 Scott, W.G., "RNA catalysis"., Current Opinion in Structural Biology, vol. 8, pp. 720-7	726, (1998).
	X255 Seeman, N.C., et al., "Emulating biology: Building nanostructures from the bottom up vol. 99, suppl. 2, pp. 6451-6455, (2002).	o"., Proc. Natl. Acad. Sci.,
	X256 Seeman, N.C., "DNA in a material world"., Nature, vol. 421, pp. 427-431, (2003).	
	X268 Soukup, G.A., et al., "Engineering precision RNA molecular switches"., Proc. Natl. Ac 3584-3589, (1999).	cad. Sci. USA, vol. 96, pp.
	X270 Srisawat, C., et al., "Sephadex-binding RNA ligands: rapid affinity purification of RNA mixtures"., Nucleic Acids Research, vol. 29, no. 2 e4, pp. 1-5, (2001).	·
	X275 Storhoff, J.J., et al., "Programmed materials synthesis with DNA"., Chem. Rev., vol. (1999).	99, no. 7, pp. 1849-1862,
	X277 Storhoff, J.J., et al., "What Controls the Optical Properties of DNA-Linked Gold Nanopa Chem. Soc., vol. 122, no. 19, pp. 4640-4650, (2000).	
	X279 Streicher, B., et al., "Lead cleavage site in the core structure of group I intron-RNA"., N 21, no. 2, pp. 311-317, (1993).	
	X280 Sugimoto, N., et al., "Site-specific cleavage reaction catalyzed by leadzyme is enhance and rare earth ions"., FEBS Letters, vol. 393, pp. 97-100, (1996).	ed by combined effect of lead
	X282 Tahan, J.E., et al., "Electrothermal atomic absorption spectrometric determination of clinical samples and in certified environmental reference materials"., Analytica Chimi 197, (1994).	ica Acta, vol. 295, pp, 187-
	X283 Takagi, Y., et al., "Survey and Summary: Recent advances in the elucidation of the ribozymes"., Nucleic Acids Research, vol. 29, no. 9, pp. 1815-1834, (2001).	
	X289 Telting-Diaz, M., et al., "Mass-produced ionophore-based fluorescent microspheres of lead ions"., Analytical Chemistry, vol. 74, no. 20, pp. 5251-5256, (2002).	
	X295 Tsien, R.Y., "Fluorescent and photochemical probes of dynamic biochemical signals Fluorescent Chemosensors for Ion and Molecule Recognition, (ed. Czamik, A. W.), of American Chemical Society, (1993).	chapter 9, pp. 130-146,
	X300 Tyagi, S., et al., "Wavelength-shifting molecular beacons"., Nature Biotechnology, vo (2000).	ol. 18, pp. 1191-1196,
	V301 Ueyama, H., "A novel potassium sensing in aqueous media with a synthetic oligonuc Fluorescence resonance energy transfer associated with guanine quartet-potassium Am. Chem. Soc., vol. 124, no. 48, pp. 14286-14287, (2002).	
	Whaley, S.R., et al., "Selection of peptides with semiconductor binding specificity for assembly"., Nature, vol. 405, pp. 665-668, (2000).	directed nanocrystal
	X325 Wiegand, T.W., et al., "High-affinity oligonucleotide ligands to human IgE inhibit bind I"., The Journal of Immunology, vol. 157, pp. 221-230, (1996).	ling to Fc epsilon receptor
	X334 Wittmann, C., et al., "Microbial and Enzyme sensors for environmental monitoring"., Electronic Noses: Medicine, Food, and the Environment, pp. 299-332, (1997).	Handbook of Biosensors an
	X336 Yan, H., et al., "DNA-Templated self-assembly of protein arrays and highly conductive 301, pp. 1882-1884, (2003).	ve nanowires"., Science, vol
	X345 International Search Report dated November 21, 2005 for corresponding PCT applic PCT/US2005/001060.	cation number
	X346 Supplemental International Search Report dated January 10, 2006 for corresponding PCT/US2005/001060.	g PCT application number
V	X347 Liu, J., et al., "Size control, metal substitution, and catalytic application of cryptomela using cross-linking reagents", Chem. Mater., vol. 16, no. 2, pp. 276-285, (2004).	ane nanomaterials prepared

Form PTO-1449 (Rev., 8-88)	Attomey Docket No. ILL05-040-DIV-US	Serial No. 10/702,676	
	Applicant: Yi Lu	ant:	
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Filing Date: November 6, 2003	Group: 1635	

7	X348	Cake, K.M., et al., "Partition of circulating lead between serum and red cells is different for internal and external
ΙV		sources of lead"., American Journal of Industrial Medicine, vol. 29, pp. 440-445, (1996).

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